


N Level Paper 2 ANSWER

1.	$\sqrt{\frac{4}{9}}, \frac{16}{27}, 60\%, (0.8)^2, 0.67, \sin 43^\circ$
2.	$\frac{15y^{-3}}{5x^{-4}} = \frac{3x^4}{y^3}$
3.	$6x - 12 = 3(x - 5)$ $6x - 12 = 3x - 15$ $3x = -3$ $x = -1$
4.	$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(3)(-1)}}{2(3)}$ $= 2.46837 \text{ or } -0.13504$ $= 2.47 \text{ or } -0.135(3\text{sf})$
5.	<p>(a)</p>  <p style="text-align: center;">Figure 5</p> <p>(b) 16, 25</p> <p>(c) n^2</p> <p>(d) Given that the number of blocks is 64,</p> $n^2 = 64$ $n = 8$ <p>Since 64 can be square-rooted to give an integer, it is possible for Mark to use 64 blocks to build a complete display piece.</p>
6.	<p>(a) $\frac{1}{4}$</p> <p>(b) $\frac{7}{12}$</p> <p>(c) 0</p>

7.	$\frac{12 \div 1000}{1 \div 3600} = 43.2 \text{ km/h or } \frac{45 \text{ km} \div 1000}{1 \text{ h} \div 3600} = 12.5 \text{ m/s}$ <p>Ans: Ali</p>																		
8.	<p>(a) Sector area = $\frac{255}{360} \times \pi(4)^2 = 35.6 \text{ cm}^2$</p> <p>(b) Perimeter of sector = $\frac{255}{360} \times \pi(8) + 4 + 4 = 25.8 \text{ cm}$</p>																		
9.	$AB^2 + BC^2 = 13^2 + 15^2$ $= 394$ $AC^2 = 212$ $= 441 \neq AB^2 + BC^2$ <p>By converse of Pythagoras's Theorem, $\angle ABC \neq 90^\circ$</p>																		
10.	<p>(a) 12, 13, 13, 14, 14, 14, 14, 15, 15, 15, 16, 16, 17, 17 Median = $14 + 15 \div 2 = 14.5$</p> <p>(b) 14</p> <p>(c)</p> $\bar{X} = \frac{12 + 2(13) + 4(14) + 3(15) + 2(16) + 2(17)}{14}$ $\bar{X} = \frac{205}{14}$ $\bar{X} = 14.6 \text{ (3sf)}$																		
11.	<table border="1" data-bbox="272 1249 549 1406"> <thead> <tr> <th><u>Map</u></th> <th><u>Actual</u></th> </tr> </thead> <tbody> <tr> <td>5 cm</td> <td>2.5 km</td> </tr> <tr> <td>5 cm</td> <td>250 000 cm</td> </tr> <tr> <td>1</td> <td>50 000</td> </tr> </tbody> </table> <p>(a) 1: 50 000</p> <p>(b) 5 cm rep 2.5 km 0.5 cm rep 1 km 3 cm rep 6 km</p> <p>Ans: 3</p> <p>(c)</p> <table border="1" data-bbox="272 1720 539 1912"> <thead> <tr> <th><u>Map</u></th> <th><u>Actual</u></th> </tr> </thead> <tbody> <tr> <td>5 cm</td> <td>2.5 km</td> </tr> <tr> <td>1 cm</td> <td>0.5 km</td> </tr> <tr> <td>1 cm²</td> <td>0.25 km²</td> </tr> <tr> <td>25 cm²</td> <td>6.25 km²</td> </tr> </tbody> </table> <p>Ans: 6.25 km²</p>	<u>Map</u>	<u>Actual</u>	5 cm	2.5 km	5 cm	250 000 cm	1	50 000	<u>Map</u>	<u>Actual</u>	5 cm	2.5 km	1 cm	0.5 km	1 cm ²	0.25 km ²	25 cm ²	6.25 km ²
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12. (a) interest paid = $\frac{2000 \times R \times 3}{100}$
 $150 \times 100 \div 2000 \div 3 = R$
 $R = 2.5$

(b) Total amount = $2000 \left(1 + \frac{1.65}{100}\right)^3 = \2100.64

Interest = $2100.64 - 2000$
 $= \$100.64$

$150 - 100.64 = \$49.36$

Ans: Archie by \$49.36

(c) Balance to be paid = $4500 - 200 = \$4300$

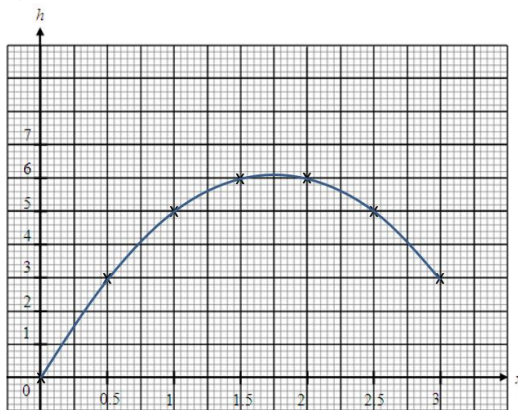
interest paid = $\frac{4300 \times 2.5 \times 2}{100} = \215

Monthly instalments = $(4300 + 215) \div 24 = \$188.13$ (3sf)

13. (a)

x	0	0.5	1	1.5	2	2.5	3
h	0	3	5	6	6	5	3

(b)



(c) (i) $x=1.75$

(ii) 6.1

(d) 0.7 and 2.8